

**IN THE CLAIMS:**

Please amend the claims as follows:

Claims 1-20 (Canceled).

Claim 21 (Currently Amended): A radiation detector comprising:

a main body;

a radiation detection probe ~~detectably~~ detachably attached to the main body; and

a collimator for collimating radiation, the collimator being provided in the distal end portion of the radiation detection probe,

the radiation detection probe having: a detection unit including a radiation detection element; a first terminal electrically connected to the radiation detection element; and a cap-shaped shield member mounted to the detection unit so as to cover the radiation detection element, the shield member being made of a material which blocks the radiation, the shield member having a front wall facing the radiation detection element, and a cylindrical side wall extending from the edge of the front wall, the collimator being a through-hole provided in the front wall,

the main body having a connector to which the proximal end of the radiation detection probe is detachably mounted, the connector including a second terminal which is detachably connected to the first terminal when the radiation detection probe is mounted to the connector,

the radiation detection probe further having:

a cap-shaped probe cover which covers the shield member and the detection unit, the probe cover being detachably mounted to the connector; and

a seal ring sandwiched between the probe cover and the connector to seal the main body and the radiation detection probe when the probe cover is mounted to the connector.

Claim 22 (Previously Presented): A radiation detector according to claim 21, wherein the detection unit has an input face which faces the collimator and transmits the radiation, and the radiation detection element is arranged so as to receive the radiation which has passed through the input face.

Claim 23 (Previously Presented): A radiation detector according to claim 21, wherein the shield member is disposed in the probe cover to allow a hollow portion of the shield member and a hollow portion of the probe cover to communicate with each other, and the detection unit is fitted into these hollow portions which communicate with each other.

Claim 24 (Previously Presented): A radiation detector according to claim 23, wherein the shield member is detachably provided in the probe cover.

Claim 25 (Previously Presented): A radiation detector according to claim 23, wherein the shield member is fixed in the probe cover.

Claim 26 (Previously Presented): A radiation detector according to claim 21, wherein the probe cover has a cap-shaped first component detachably mounted to the connector, a cap-shaped second component detachably attached to the first component to accommodate and

fix the shield member, and a seal ring sandwiched between the outer surface of the first component and the inner surface of the second component to seal the probe cover when the second component is attached to the first component, and

the second component is attached at positions variable along the axis of the probe cover.

Claim 27 (Previously Presented): A radiation detector according to claim 21, wherein the probe cover has an input plate facing the front wall of the shield member to close an end of the collimator, and a cylindrical side wall extending from the edge of the input plate to surround the side surfaces of the shield member and the detection unit, and

the input plate is made of a material which transmits the radiation and blocks an electromagnetic wave having an energy of 1 keV or less.

Claim 28 (Previously Presented): A radiation detector according to claim 21, wherein the detection unit has a casing for accommodating the radiation detection element, an opening is provided on the distal end of the casing so as to extend from an end face of the casing toward the radiation detection element, and

the opening has substantially the same cross-section as that of the collimator and communicates with the collimator.

Claim 29 (Previously Presented): A radiation detector comprising:  
a main body;  
a radiation detection probe detachably attached to the main body; and

a collimator for collimating radiation, the collimator being provided in the distal end portion of the radiation detection probe,

the radiation detection probe having a detection unit including a radiation detection element, and a first terminal electrically connected to the radiation detection element,

the main body having a connector to which the proximal end of the radiation detection probe is detachably mounted, the connector including a second terminal which is detachably connected to the first terminal when the radiation detection probe is mounted to the connector,

the radiation detection probe further having:

a cap-shaped probe cover which covers the detection unit, the probe cover being detachably mounted to the connector; and

a seal ring sandwiched between the probe cover and the connector to seal the main body and the radiation detection probe when the probe cover is mounted to the connector,

the probe cover being made of a material which blocks the radiation,

the collimator being an opening provided on the distal end of the probe cover to extend toward the radiation detection element,

the radiation detector further comprising an input plate for closing an end of the collimator, the input plate being provided on the distal end surface of the probe cover, and the input plate being made of a material which transmits the radiation and blocks an electromagnetic wave having an energy of 1 keV or less.

Claim 30 (Presently Presented): A radiation detector according to claim 29, wherein

the detection unit has an input face which faces the collimator and transmits the radiation,

and

the radiation detection element is arranged so as to receive the radiation which has passed through the input face.

Claim 31 (Previously Presented): A radiation detector comprising:

- a main body;
- a radiation detection probe detachably attached to the main body; and
- a collimator for collimating radiation, the collimator being provided in the distal end portion of the radiation detection probe,

the radiation detection probe having a detection unit including a radiation detection element, and a first terminal electrically connected to the radiation detection element,

the main body having a connector to which the proximal end of the radiation detection probe is detachably mounted, the connector including a second terminal which is detachably connected to the first terminal when the radiation detection probe is mounted to the connector,

the connector further including a support bar protruding from the distal end of the main body and being thinner than the radiation detection probe, and

the support bar having a proximal end connected to the distal end of the main body and a distal end connected to the radiation detection probe.

Claim 32 (Previously Presented): A radiation detector according to claim 31, wherein

- the detection unit has an input face which transmits the radiation,
- the radiation detection element is arranged so as to receive the radiation which has passed through the input face, and
- the collimator is an opening which faces the input face.

Claim 33 (Previously Presented): The radiation detector according to Claim 31, wherein the connector further includes a slide member slidably attached to the support bar, and the collimator moves along with the slide member, and the distance between the collimator and the radiation detection element varies as the slide member slides relative to the support bar.

Claim 34 (Previously Presented): A radiation detector comprising:  
a main body;  
a radiation detection probe detachably attached to the main body; and  
a collimator for collimating radiation, the collimator being provided in the distal end portion of the radiation detection probe,  
the radiation detection probe having a detection unit including a radiation detection element, and a first terminal electrically connected to the radiation detection element,  
the main body having a connector to which the proximal end of the radiation detection probe is detachably mounted, the connector including a second terminal which is detachably connected to the first terminal when the radiation detection probe is mounted to the connector,  
one of the first and second terminals including a plurality of pins having different fitting lengths and different polarities, and the other including a plurality of sockets into which the plurality of pins are fitted, the plurality of sockets having fitting lengths and polarities corresponding to the plurality of pins.

Claim 35 (Previously Presented): A radiation detector according to claim 34, wherein  
the detection unit has an input face which transmits the radiation,  
the radiation detection element is arranged so as to receive the radiation which has passed  
through the input face, and  
the collimator is an opening which faces the input face.

Claim 36 (Previously Presented): A radiation detector comprising  
a main body, and  
a radiation detection probe detachably attached to the main body,  
the radiation detection probe having a radiation detection element, a first terminal  
electrically connected to the radiation detection element, a cylindrical element cover surrounding  
the radiation detection element, and a cylindrical casing for accommodating the element cover,  
the main body having a connector to which the proximal end of the radiation detection  
probe is detachably mounted, the connector including a second terminal which is detachably  
connected to the first terminal when the radiation detection probe is mounted to the connector,  
the element cover being made of a material which blocks radiation, and  
the radiation detection element being disposed behind the distal end of the element cover.

Claim 37 (Previously Presented): A radiation detector according to claim 36, further  
comprising a fastener detachably mounted to the main body to fasten the radiation detection  
probe to the connector.

Claim 38 (Previously Presented): A radiation detector according to claim 37, further comprising a seal ring sandwiched between the fastener and the connector to seal the main body when the fastener is mounted to the connector.

Claim 39 (Previously Presented): A radiation detector according to claim 36, wherein an input plate facing the radiation detection element is provided on the distal end surface of the casing, and

the input plate is made of a material which transmits the radiation and blocks an electromagnetic wave having an energy of 1 keV or less.